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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,893	07/07/2003	Richard Kramer	1454.1469	7026

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

BRINEY III, WALTER F

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,893

Applicant(s)

KRAMER, RICHARD

Examiner

Walter F Briney III

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/22/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

- 1. Claims 1, 2, 5, 6, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Bershad et al. (US Patent Application Publication 2003/0219113).**

Claim 1 is limited to *a method of line matching for analog communications lines in telecommunications networks via at least one signal processor and/or programmable digital filter*. Bershad discloses an echo canceller with double-talk and channel impulse response adaptation. See Abstract. The preferred layout of the echo canceller disclosed by Bershad is depicted in figure 1, with further detail concerning the transversal time domain filters depicted in figures 3 and 4. Bershad touts early double-

talk detection by storing an extra M symbols at the front of the input delay line. These are adapted like the other symbols, but are not used in the removal of echo. The double-talk and impulse response adaptation comprises comparing the filter coefficients stored within the shadow filter (108) to those stored in the main filter (106). When a measured energy difference satisfies certain criteria, the coefficients from shadow filter are transferred to the main filter (*i.e. generating a new set of filter coefficients when incorrect line matching is identified; and feeding the new set of filter coefficients into the digital filter device*). See paragraphs 36-41, 44-47, in particular, paragraph 47. Therefore, Bershad anticipates all limitations of the claim.

The apparatus defined in claim 6 is covered by the examples recited in the rejection of the method of claim 1, and is rejected for the same reasons.

Claim 2 is limited to *the method according to claim 1*, as covered by Bershad. As seen in figure 5, the echo canceller disclosed by Bershad is implemented within a four-wire digital network, and inherently computes the echo path (*i.e. coefficients of the line transmission function*) for a first line gateway in the line path. Therefore, Bershad anticipates all limitations of the claim.

Claim 5 is limited to *the method according to claim 1*, as covered by Bershad. As seen in paragraphs 37 and 38, Bershad discloses calculating the metric and the subsequent comparison by looking only at the extra M taps of the transversal filter (*i.e. wherein the comparison is executed between compute-time optimized approximation methods*). Therefore, Bershad anticipates all limitations of the claim.

The method defined in claim 8 is essentially the same as that of claim 1, and is rejected for the same reasons. Notice, the echo canceller of Bershad is digital, and implemented in software. See paragraph 56.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bershad in view of Sih (US Patent 5,732,134).

Claim 3 is limited to *the method according to claim 1*, as covered by Bershad. Bershad discloses in paragraph 37 and 38 that the comparison is made between the time-averaged energy of the two filters' coefficients. Therefore, Bershad anticipates all limitations of the claim with the exception *wherein the comparison is made using a folding and/or Fourier transformation operations*.

Sih discloses a method of doubletalk detection by means of spectral content. See Abstract. The method of Sih teaches that time-domain energy comparisons used in echo cancellers are significantly affected by noise disturbance. See column 2, lines 10-35. In solution, Sih teaches performing metric comparisons using the spectral content of a signal. See column 2, lines 38-64. Clearly, this provides noise immunity, as the entire spectrum of the signal is considered instead of only the composite signal.

It would have been obvious to one of ordinary skill in the art at the time of the invention to compare the filter coefficients' spectral content instead of their short-term average energies as taught by Sih for the purpose of providing greater noise immunity in an echo canceller system.

The limitations presented in claim 4 are essentially the same as those presented in claim 2, and are rejected for the same reasons presented therein.

The apparatus defined in claim 7 is covered by the examples recited in the rejection of the method of claim 3, and is rejected for the same reasons.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F Briney III whose telephone number is 703-305-0347. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WFB
10/14/04



XU MEI
PRIMARY EXAMINER